

CLAIMS

1. An immunopotentiative composition comprising an immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2.
2. A composition for treatment of cancer comprising the immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2.
3. The composition for treatment of cancer according to claim 2, which is a composition that suppresses cancer metastasis.
4. A composition for treatment of infection comprising an immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2.
5. The composition for treatment of cancer according to claim 2 or 3, which acts through immunopotentiation.
6. The composition for treatment of infection according to claim 4, which acts through immunopotentiation.
7. The composition according to any one of claims 1 to 6, wherein the immunosuppressive signal inhibitor is one or more selected from an interaction inhibitor of PD-1 and PD-L1 or PD-1 and PD-L2, an intracellular signaling inhibitor of PD-1, and a production inhibitor of PD-1, PD-L1 or PD-L2.

8. The composition according to claim 7, wherein the interaction inhibitor of PD-1 and PD-L1 is one or more selected from a PD-1 antibody, a PD-L1 antibody, soluble PD-1, and soluble PD-L1.

9. The composition according to claim 8, wherein the PD-1 antibody is selected from an anti-human PD-1 antibody produced by a hybridoma internationally deposited as FERM BP-8392, a humanized anti-PD-1 antibody of a non-human antibody, and a human anti-human PD-1 antibody.

10. The composition according to any one of claims 1 to 6, wherein the immunosuppressive signal inhibitor is a lymphocyte in which PD-1 expression is inhibited by gene-recombination.

11. The composition according to claim 7, wherein the interaction inhibitor of PD-1 and PD-L1 or PD-1 and PD-L2, the intracellular signaling inhibitor of PD-1, or the production inhibitor of PD-1, PD-L1 or PD-L2 is one or more substances selected from a protein, a polypeptide, a peptide, a polynucleotide, a polynucleoside, an antibody or a derivative thereof, an organic synthesis compound, an inorganic compound, and a natural product.

12. An immunopotentiative method, which comprises administering the immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2.

13. A method for treatment of cancer, which comprises administering the immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2.

14. The method for treatment of cancer according to claim 13, which suppresses cancer metastasis.

15. A method for treatment of infection, which comprises administering the immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2.

16. The method for treatment of cancer according to claim 13 or 14, which is acted through immunopotentialiation.

17. The method for treatment of infection according to claim 15, which is acted through immunopotentialiation.

18. The method according to any one of claims 12 to 17, wherein the immunosuppressive signal inhibitor is one or more selected from an interaction inhibitor of PD-1 and PD-L1 or PD-1 and PD-L2, an intracellular signaling inhibitor of PD-1, and a production inhibitor of PD-1, PD-L1 or PD-L2.

19. The method according to claim 18, wherein the interaction inhibitor is one or more selected from a PD-1 antibody, a PD-L1 antibody, soluble PD-1, and soluble PD-L1.

20. The method according to claim 19, wherein the PD-1 antibody is an antibody selected from an anti-human PD-1 antibody produced by a hybridoma internationally deposited as FERM BP-8392, a humanized anti-PD-1 antibody of a non-human antibody, and a human anti-human PD-1 antibody.

21. The method according to any one of claims 12 to 17, wherein the immunosuppressive signal inhibitor is a lymphocyte in which PD-1 expression is inhibited by gene-recombination.

22. The method according to claim 18, wherein the interaction inhibitor of PD-1 and PD-L1 or PD-1 and PD-L2, the intracellular signaling inhibitor of PD-1, or the production inhibitor of PD-1, PD-L1 or PD-L2 is one or more substances selected from a protein, a polypeptide, a peptide, a polynucleotide, a polynucleoside, an antibody, a derivative thereof, an organic synthesis compound, an inorganic compound, and a natural product.

23. Use of an immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2 for the manufacture of an immunopotentiative composition.

24. Use of an immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2 for the manufacture of a composition for treatment of cancer.

25. The use according to claim 24, wherein the composition for treatment of cancer is a composition for suppression of cancer metastasis.

26. Use of an immunosuppressive signal inhibitor of PD-1, PD-L1 or PD-L2 for manufacture of the composition for treatment of infection.

27. A carcinoma cell line for screening, which is transformed to thereby express PD-L1 or PD-L2.

28. A screening method for an immunopotentiative substance, which comprises allowing a test substance to contact with the cells according to claim 27 and a lymphocyte to evaluate enhancement of the test substance for immune reaction of the lymphocyte to the cells according to claim 27.

29. A screening method for a substance for treatment of cancer, which comprises allowing a test substance to contact with the cell according to claim 27 which is a carcinoma cell and a lymphocyte to evaluate enhancement of the test substance for immune reaction of the lymphocyte to the carcinoma cell and inhibitory effect of test substance for carcinoma cell proliferation.

30. A screening method for a substance for treatment of infection, which comprises allowing a test substance to contact with the cell according to claim 27 which is infected with a pathogen and a lymphocyte to evaluate enhancement of the test substance for immune reaction of the lymphocyte to the infected cell and inhibitory effect of test substance for pathogen proliferation.

31. A mammal prepared by transplanting the cell line according to claim 27 which is a carcinoma cell.

32. A screening method for a substance for treatment of cancer, which comprises administering a test substance to the mammal according to claim 31 to evaluate an inhibitory ratio of the test substance for transplanted carcinoma cell proliferation or a survival rate of the mammal which is transplanted.